

8/6/2013

## Fish Scale Correlation Testing

### Backstory:

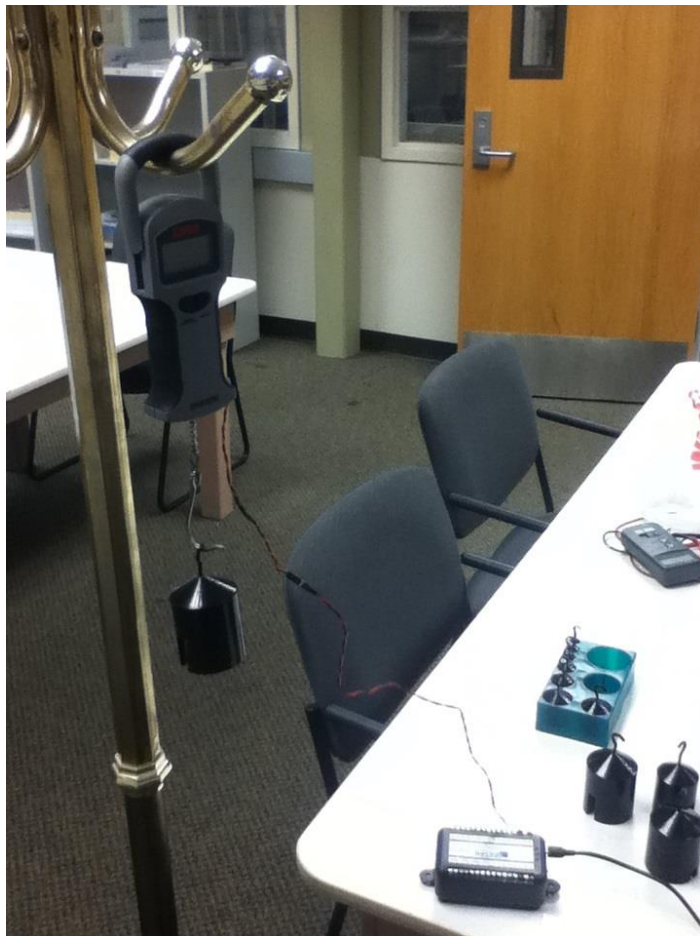
Our team has been given an electronic fishing scale for our friction testing. It reads the weight of a fish in kilograms. Robert Fuhrmann also lent us a Dataq 155 data acquisition device that could be linked to the scale and to a computer via USB. Upon initial testing of the apparatus we found that the voltage readings from the scale were very minute. We have also discovered that the change in voltage was even smaller when weight was added. This poses a problem, since when we need to read the data from the final wheel/friction test, we need to be able to read detailed information in order to have definitive values in which to base our decisions.

### Task:

I am going to test the minute voltages and find their correlation to the force of each weight. This will give us the equation(s) we need to find quick accurate answers while doing the final test.

### Experiment:

The set up shown below is my testing apparatus:



The fishing scale was hung on a coat rack to allow for large hanging space. The Dataq instrument is on the table connected to both the scale and the computer (out of frame to the right).

The Dataq device came with a simple to use program that constantly reads the input, but does not record until instructed to do so.

For each recorded test, I allowed a one second buffer for the scale to stabilize, and then lowered the weight onto the scale for one second. Next I lifted the weight off and repeated the last two steps twice more. This was done with weights ranging from 0.5kg to 3.5kg in increments of 0.5kg.

This data was logged and sent to Microsoft Excel to compile the data. An example of this is on the following page. The final highlighted answers were then

compiled together into one final document where the correlation equations were computed.